

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number
WO 2004/023376 A3

(51) International Patent Classification⁷: **G06F 3/033**

Holstlaan 6, NL-5656 AA Eindhoven (NL). **CORNELISSEN, Hugo, J.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(21) International Application Number: PCT/IB2003/003404

(74) **Agent:** **DEGUELLE, Wilhelmus, H., G.;** Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(22) International Filing Date: 4 August 2003 (04.08.2003)

(25) Filing Language: English

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) **Publication Language:** English

(30) Priority Data:
02078673.7 6 September 2002 (06.09.2002) EP

(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

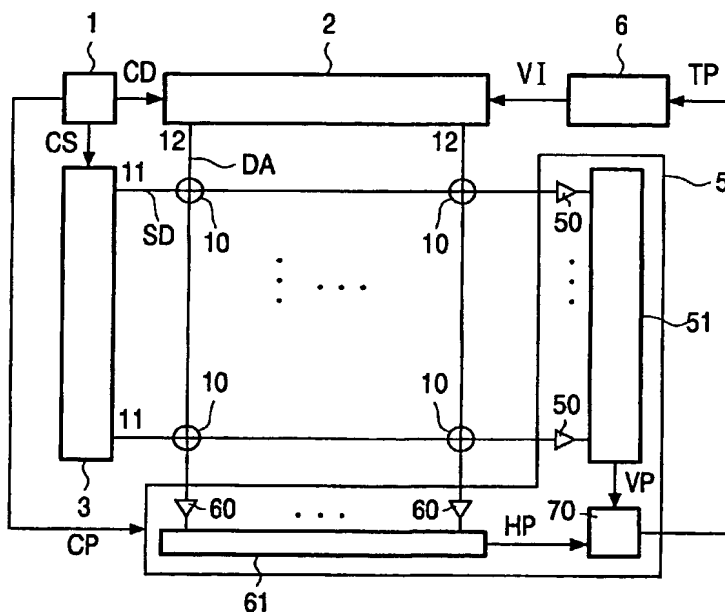
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): JOHNSON, Mark, T. [GB/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). HENZEN, Alexander, V. [NL/NL]; c/o Prof.

[Continued on next page]

(54) Title: TOUCH SENSING



(S7) Abstract: A touch sensitive matrix display senses touch input in sense periods (SP) which are selected to occur non-concurrently with data (DA) written to the pixels (10) of the matrix display during the addressing period (AP). As now, no data (DA) is written to the display while the sensing is performed during the sense periods (SP), the sensing will be less complicated. The sense periods (SP) are selected to occur in-between successive addressing periods (AP) because the display has pixels (10) of which the optical state is maintained substantially longer than the addressing period (AP) lasts. Such a hold period (HP) which lasts substantially longer than the addressing period (AP) is for example available in bistable displays such as electrophoretic displays.

WO 2004/023376 A3